Level 2 Systems architecture (7540-013)

Systems and Principles
Assignment guide for Candidates
Assignment C

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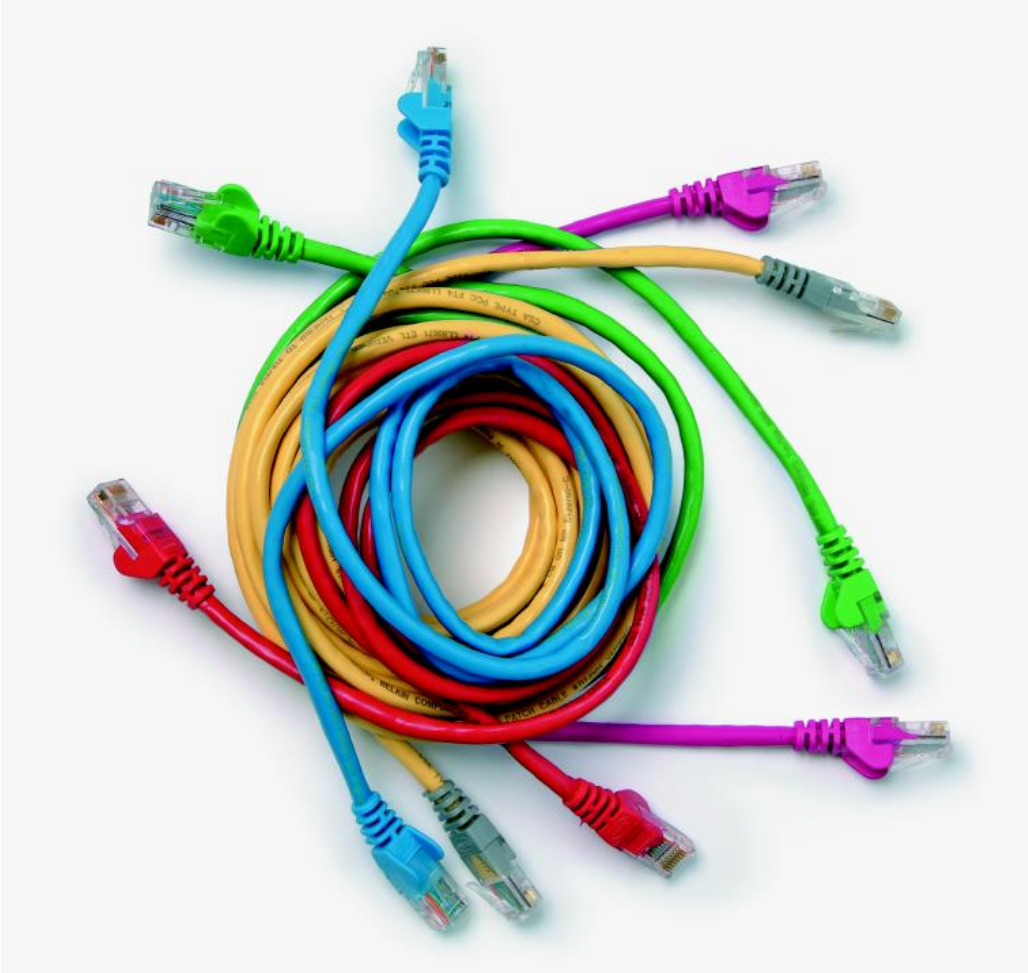

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Contents

Level 2 Systems architecture (7540-013)

Assignment C

Introduction – Information for Candidates	2
Candidate instructions	3

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Introduction – Information for Candidates

About this document
This assignment comprises all of the assessment for Level 2 Systems architecture (7540-013).

Health and safety
You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance
The recommended time allowance for this assignment is **2 hours**.

Level 2 Systems architecture (7540-013)
Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 2 hours

This assignment is made up of **three** tasks.

- Task A – Information within a computer
- Task B – Operating environment
- Task C – Distributed Operated Systems

Scenario

You have just completed your apprenticeship and are applying for a job as a junior technician, as part of the interview process you have been asked to show what you understand about systems architecture by answering the following questions.

These answers will contain diagrams which may be hand drawn or produced on a computer.

Task A – Information within a computer

Please use the Answer Sheet provided to complete Task A.

1 Outline using examples how the following number systems store information in a computer:
   a binary
   b hexadecimal
   c ASCII.

2 Explain the role of input devices, output devices and storage devices, giving **two** examples in each case.

3 Describe how any **two** of the following peripheral devices operates.

- Keyboard
- Mouse
- Disk Drive
- Printer.

4 Draw a diagram explaining the Fetch Execute Cycle.
Please note that this can be hand drawn or word processed.

5 Draw a simple block diagram of the Central Processing Unit (CPU) explaining the function of **each** component.
Please note that this can be hand drawn or word processed.

Task B - Operating environment

1 **Take screen prints of the following:**
For your evidence created in **Task A1** or text provided by the Assessor, copy and paste it into your text editor. Then:
- save the text edited work as *yourname* using your text editing package
- create a new folder in your home directory called *printing* and copy *yourname.txt* to this folder
- using the command line interface rename *yourname.txt* to *todaysdate.txt*

2 Please use the Answer Sheet provided to complete Task B2.
Identify and briefly describe **two** security features which are typically built into a network operating system.

3 Please use the Answer Sheet provided to complete Task B3.
Briefly explain the processes involved in an operating system as listed below:
- memory management techniques
- file management (directory structure, file structure, file access control, storage methods)
- storage protection methods.

4 Within the operating system you are using, demonstrate to the Assessor how to end a program or process that has deadlocked/stopped working.

Task C - Distributed Operated Systems

Please use the Answer Sheet provided to complete Task C.

1 Identify and explain **three** main functions of a distributed operating system.

2 Briefly explain the purpose of the OSI seven layer model in relation to networking and communication of data between entities.

When you have finished working:

- Sign each document above your name and label all removable storage media with your name.
- Hand all paperwork and removable storage media to your assessor.

If the assignment is taken over more than one period, all paperwork and removable media must be returned to the test supervisor at the end of each sitting.

End of assignment

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